# Blades Groundwater National Priorities List Proposal (NPL)



U.S. Environmental Protection Agency, Region 3

December 5, 2019

By: Connor O'Loughlin, Amanda Miles, Dan Taylor, Stepan Nevshehirlian

# **Blades Municipal and Private Wells**

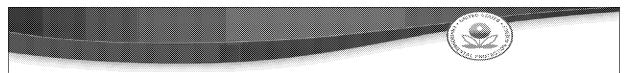
#### **Public Water**

- Recent testing in September and November 2019 indicates the public water continues to meet the applicable standards.
- $\bullet$  DNREC plans to continue sampling the Town of Blades public water until the site is listed to the NPL by the EPA.

#### **Private Impacted Wells**

- Since February 2018, DNREC has supplied eight (8) private residences with carbon treatment to remove PFAS from their drinking water wells to meet the applicable standards.
- DNREC will continue to provide these residences with carbon treatment until the site is listed and EPA takes over the maintenance of the treatment program.

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## **Agenda Overview**

December 5, 2019, 6:30 p.m. - 8:00 p.m.

- Introductions/Welcome (Amanda Miles, Community Involvement Coordinator, EPA)
- DNREC current site status (Tim Ratsep, Director of DNREC's Division of Waste and Hazardous Substances, DNREC)
- NPL proposal (Connor O'Loughlin, Site Assessment Manager, EPA)
- Superfund Remedial Process (Daniel Taylor, Remedial Project Manager, EPA)
- Community Resources (Amanda Miles, Community Involvement Coordinator, EPA)
- Q&A (All)
- · Closing (Amanda Miles, Community Involvement Coordinator, EPA)

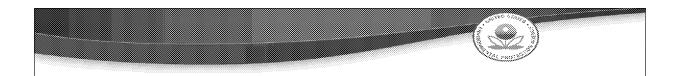
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Mark will say that questions should be held to the end



# **DNREC** current site status

Tim Ratsep, Director of DNREC's Division of Waste and Hazardous Substances



# Blades Groundwater Site Assessment process

Connor O'Loughlin
EPA Site Assessment Manager

- Good Evening, Thank you everyone for participating in this Site Meeting for the Blades Groundwater Plume.
- · My name is Connor O'Loughlin. I am the Site Assessment Manager for the USEPA for this site.
- This evening I will be sharing some of the details of the Blades Groundwater Plume Site and the adjacent areas.

In addition, I will also discuss the four phases of EPA's assessment and investigation process and finally the process of National Priorities Listing.

EPA and Delaware's DNREC-SIRS have been in cooperation with EPA since the mid to late 1990's in order to identify facilities and sources of contamination in the area.

Two electroplating facilities in particular, Peninsula Plating was first discovered by the Town of Blades and DNREC in 1999 and Procino Plating in 1994.



# **Purpose of meeting:**

## Discuss:

- 1. EPA's site inspection data
- 2. The process for proposal of Blades Groundwater to the National Priorities List (NPL).

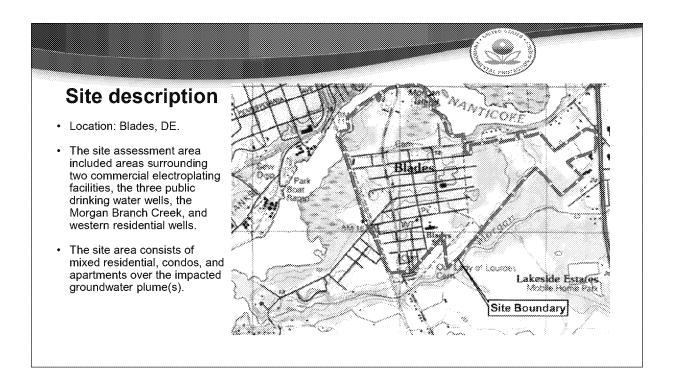
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# **Introduction to Site Assessment:**

- EPA conducted a site review in cooperation with DNREC's state program to investigate public water contamination in Blades, DE.
- EPA's removal and site assessment programs responded to the drinking water contamination in the public wells.

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#### Located Blades, DE

The center of the site is near Triangle Park at the intersection of W. 7th Street and 8th Street .

The known area of assessment comprises multiple residential, commercial areas above the impacted groundwater zones. The impacted groundwater targets EPA assessed were the public wells, residential wells, and surface water, and industrial facilities near the drinking water wells.

The Town of Blades Water Treatment facility location Ex. 9 - Wells

Throughout Assessment Process we want to assure everyone that the public drinking water supplied by The Town of Blades has met and continues to meet Federal and State Safe Drinking Water Act standards.

Explain the approximate boundaries of the groundwater plumes from the investigations. The currently understood plumes potentially emanate from... Procino Plating

EPA identified 17 existing monitoring wells in the shallow aquifer. EPA installed four additional wells on the property.

17 of 21 wells show elevated concentrations of metals and/or PFAS in the shallow soils and groundwater.

Peninsula Plating

EPA installed two nested monitoring wells in the shallow aquifers.

The wells showed concentrations of metal and PFAS in the shallow soils and groundwater.

EPA and DNREC have made significant efforts to identify the specific source(s) of groundwater contamination through the installation and sampling of twenty monitoring wells ranging in depth from 12 feet below ground surface (bgs) to 96 feet bgs. Analytical results document the presence of site-related contaminants in groundwater

#### Nanticoke Aquifer and Columbia Aquifer:

The aguifer below the facilities are utilized by the municipal extraction system and has become contaminated.

The potential source area has not been fully identified or delineated.

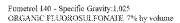
Contamination in the shallow and deep aquifers has not been fully investigated, and it is unclear the extent to which the aquifer is impacted due to limited data. The future Site processes that EPA conducts is designed to determine what future activities are required.

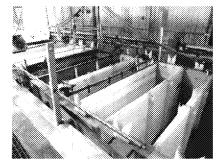


# **Identification of Blades Groundwater:**

- EPA conducted a site review of two electroplating facilities as part of state-led remedial investigations for metals and PFAS contamination.
- Fumetrol 140 and other mist suppressants were found to have been used at two electroplating facilities.



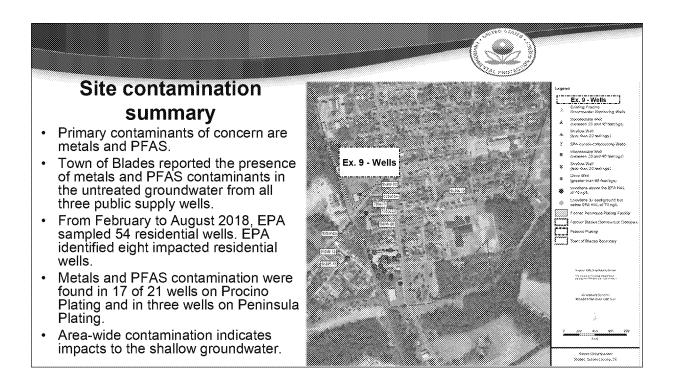




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During EPA's review of Site documentation, new information was discovered in several photographs which indicated the use of a new emerging contaminant called PFAS in 2016. The compound called is called Fumetrol 140 and was identified at one of the electroplating facilities.

As a result of this information, EPA recommended DNREC sample the three municipal wells close to the site for PFAS, chromium, and VOCs. Contamination was found in the three nearby municipal wells in February of 2018. PFAS are new emerging group of fluorinated, organic, man-made compounds, that include PFOS and PFOA and are used in a wide variety of industrial and commercial processes. In this case metal plating, mist suppressants, cleaning products, and fire-fighting foam.



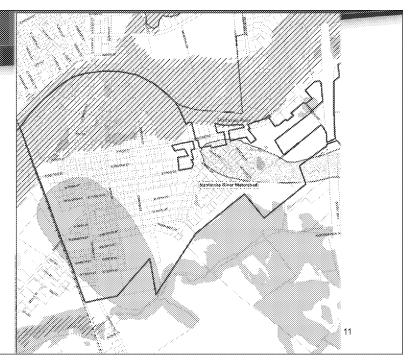
Due to the contamination identified in the public wells, The State of Delaware and DNREC immediately mobilized the National Guard to provide drinking water in spring of 2018.

The water for the town is provided by the Town of Blades. The town runs and maintains the plant and wells. The chemicals which are present are toxic but are easily removed with the current treatment methods.

The town conducts sampling at regular intervals and have had no exceedances to date in the treated public water. Current production of the municipal system serves 1,600 residents or approximately 500 metered customers.

## Town of Blades:

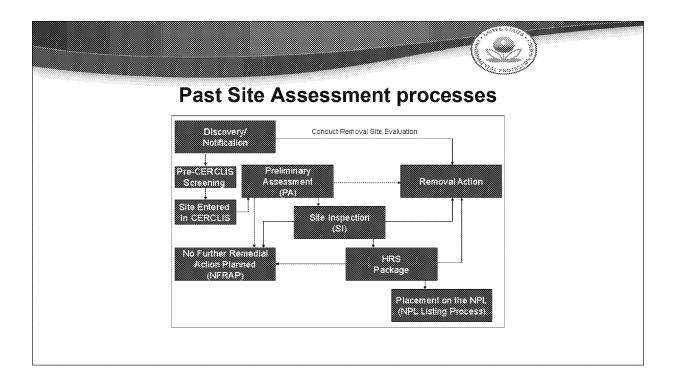
- Blades municipal boundary (red line)
- Groundwater recharge zones (blue areas)
- Green areas (parks and vegetation)





# **Responsibility for Ongoing Operations**

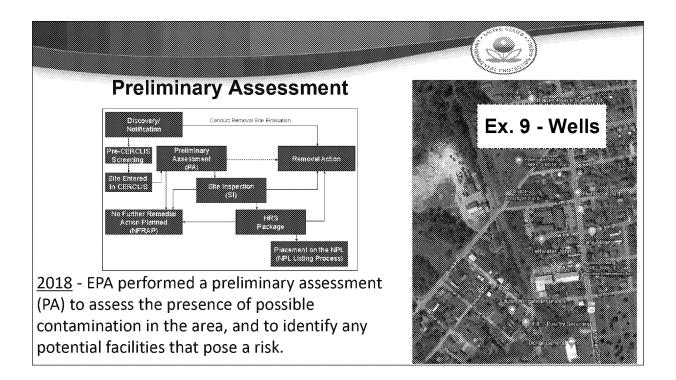
- DNREC requested EPA's assistance investigating facilities and groundwater plumes.
- EPA, in cooperation DNREC, will lead the next phase of the investigation and potential future cleanup efforts.
- The public drinking water supplied by the town has been treated since 2018 to remove the contaminants from the untreated/raw water and will continue to be treated to meet Federal and State standards.



This is the Site Assessment Process. It shows the steps leading up to the placement of the site onto the National Priorities List or the NPL.

The first step of the process is the Site discovery. The sites were first identified by the State of Delaware as having metals contamination at two industrial sites in town. EPA was notified of the contamination and responded to site contamination of metals beginning in 1995. DNREC and the facilities have continued to respond under the Voluntary Cleanup Program from 1995 to present.

EPA and DNREC continued to respond to new information and information regarding emerging contaminates – PFAS in 2016. In 2018 metals compounds and PFAS were reported in the raw groundwater supplying water to the three public wells. The town provided data to DNREC and was in turn reported to EPA. Due to the new groundwater contamination in Blades the area became a new site called (Blades Groundwater). EPA officially discovered the new site in the spring of 2018.



In 2016, EPA first became involved in the Site to perform a facility review of two operating facilities in the area. The goal and the mission of EPA in this initial stage was to identify the potential sources of contamination - or potential for a release from individual facilities in the area.

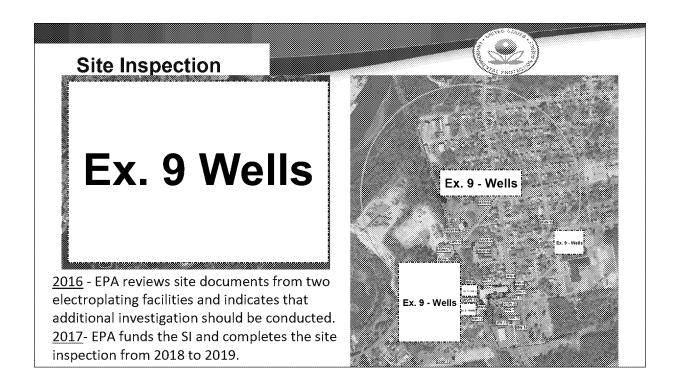
We used what's called a PRELIMINARY ASSESSMENT or PA to do so.

A PA is an initial evaluation of the potential risk posed by a site to human health or the environment.

This assessment identified potential sources and facilities who may have used, stored, or disposed of hazardous chemicals or pollutants on the properties.

The PA was a limited-scope investigation performed in this case under a long standing cooperative agreement with DNREC. In the fall of 2017, EPA informed DNREC that Fumetrol 140 was identified as being used on the Procino Plating facility. EPA and DNREC discussed the new information and decided that there was a concern and concurred that the public wells would be sampled out of an abundance of caution in February 2018.

Do to the new data collected during the course of the investigation, EPA performed the second step in the Superfund assessment process, called a Site Inspection or (SI) beginning in February of 2018.



• In 2018, EPA conducted the SITE INSPECTION or SI. It is designed to further investigate the site. EPA collected water and soil samples from 41 wells and borings to determine the substances present at a site, and whether they are being released to the environment.

DNREC had previously identified potential commercial and industrial properties that may have contributed to the contamination.

The primary objective of the SI was to identify sites that have a high probability of exhibiting contamination, and would therefore qualify the Site for the National Priorities List (NPL) process.

I wanted to note that the SI collects limited information that would show if there is contamination released to the environment. It does not give the complete picture of the nature and extent of the contamination. Those data would be investigated during the later remedial phases.

In In October 2018, November 2018 and March 2019, EPA collected groundwater samples from the 21 newly installed monitoring wells; twenty existing monitoring wells at two metal plating facility, Procino Plating and Peninsula Plating, located in Blades; and from the three public supply wells to validate the data from previous investigations and to be able to include the datasets into the future NPL listing documentation.

• After the round of sampling during the SI, EPA and DNREC concluded that there was still an ongoing problem. In concurrence with the State of Delaware, EPA pursued an HRS package and the potential placement on the National Priority List



## **Superfund Site Assessment summary:**

- EPA lead Site Assessment activities beginning in April 2016 to assess new information from ongoing site investigations and the newly identified emerging contamination.
- EPA's Site Assessment Program requested assistance from EPA's Removal program in May 2017 to address
  potential residential groundwater issues.
- Due to the contamination identified in the public wells, The State of Delaware and DNREC immediately mobilized the National Guard to provide drinking water in the spring of 2018.
- Beginning in 2018 the town provided water to anyone affected by the impacted drinking water. The town will continue to treat and remove the contamination from the water supply, enabling the water to continue meeting both federal and the more stringent state safe drinking water standards.
- In the Spring of 2018, EPA and DNREC concluded that there was an ongoing risk to human health and the
  environment and EPA decided to pursue the additional investigation.

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From 1999 to 2019, DNREC has pursued investigations at the facilities. Due to the complexity of the geology and wide affect of the contamination. DNREC asked EPA for assistance in further evaluation of the site.

In the Spring of 2016, EPA and DNREC concluded that there was an ongoing risk to human health and the environment and EPA decided to pursue the additional investigation.

In 2018 as part of a Removal Assessment, EPA sampled 56 residential wells at the Site to validate the metals data from the Remedial Investigation performed by DNREC and Procino Plating in the ongoing RI investigations and subsequent data collected by DNREC and additional potential PRPs. EPA also conducted additional investigation into shallow soil and groundwater on the site. To date EPA has conducted two rounds of groundwater investigations, two municipal well sampling events, and one round of shallow soil, surface water, and sediment investigations.

Removal Actions are immediate, short-term responses intended to protect people from immediate threats posed by hazardous waste sites. The Removal Assessment is operating concurrently with The National Priorities Listing or NPL, and is also called the "Superfund" listing process.

In the beginning of 2018, EPA proposed the intent to list the Site. Should the site be listed on the NPL the State of Delaware will continue to assist the EPA in making the necessary cleanup decisions to protect public health and the environment.



#### Removal assessment:

- In September 2018, EPA sampled residential wells to assess drinking water risks.
- EPA conducted two rounds of groundwater sampling in order to assess the impacts to the groundwater aquifer.
- In 2018, EPA identified eight residential wells that were impacted with PFAS and metals.
- In spring of 2018, DNREC and the Town of Blades installed a treatment system on the public wells to mitigate the PFAS contamination.
- DNREC also installed treatment systems on eight affected residential wells.

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Eight drinking water wells are impacted

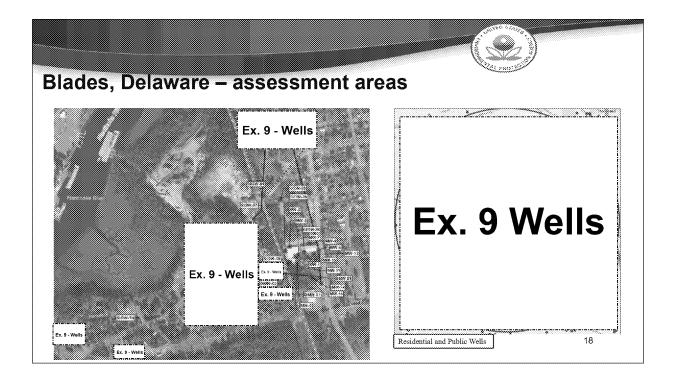
Study found levels of PFAS during the removal assessment did pose as a concern at the time.

The town will continue to retest the municipal wells at regular intervals to ensure human health is protected.

In support of the HRS process - EPA continued to evaluate the potential environmental health pathways. Emerging chemicals such as PFAS can impact shallow groundwater quickly which may eventually impact additional wells.

The wells were all sampled during single rounds to ensure that EPA included the most up to date snapshot of the data for the future HRS documentation.

EPA and DNREC will continue cooperation to evaluate the 2 facilities and determine the potential for migration of PFAS and metals at the site.



This map shows a section of the town of Blades, Delaware. We are investigating this area because concentrations of a metals and electroplating fluids identified in the raw, untreated water in the public wells.



## Complex site geology:

- Nanticoke River Group
- Columbia Aquifer
- Beaverdam Formation
- Manokin Formation

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With the information that we have – the three main geological layers we are interested in identifying further during the next phases of the investigation.

Nanticoke River Group - coarse sand, clay, and silt. Quartz sand is laminated. Up to 25 feet thick.

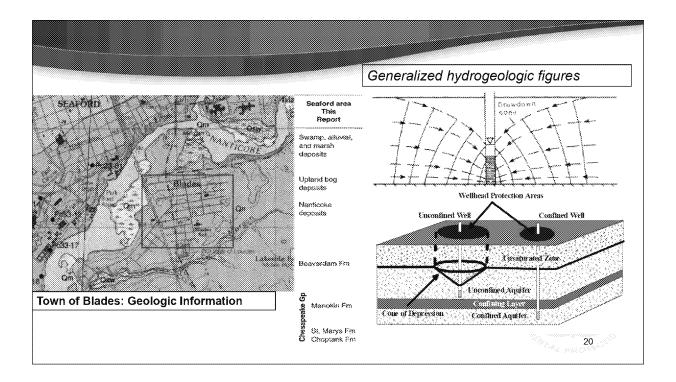
Columbia Aquifer - Included in the Columbia Aquifer are the Beaverdam, and the Manokin Formations.

Beaverdam Formation - coarse sand with pebbles and silty clay. Thickness up to 105 feet.

Manokin Formation – coarsening upward sequence of gray, blue-gray, silty sand and fine to coarse sand. Thickness up to 50 feet.

Three drinking water wells, and 56 residential wells are located in the Columbia Aquifer, which is highly productive, sole source, unconfined geological formation.

on that we have – the three main geological layers we are interested in identifying further during the next phases of the investigation.



This is a typical geological diagrams for this area – But it can be used to explain the relationships between the geology and the flow of water across the site.

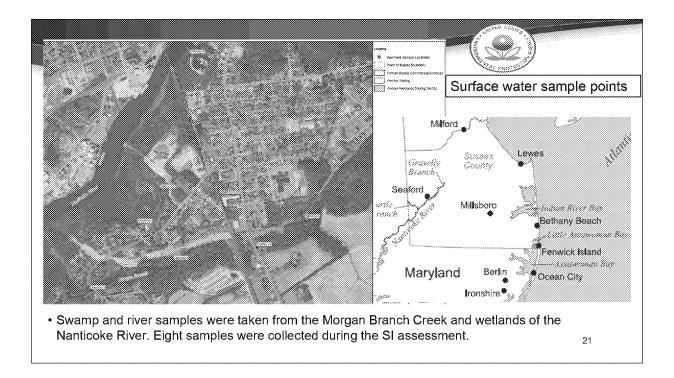
The drinking water on the site comes from the Columbia Aquifer.

The sand units in the aquifer have the potential to transport large volumes of water through the highly productive unconfined sandy aquifer.

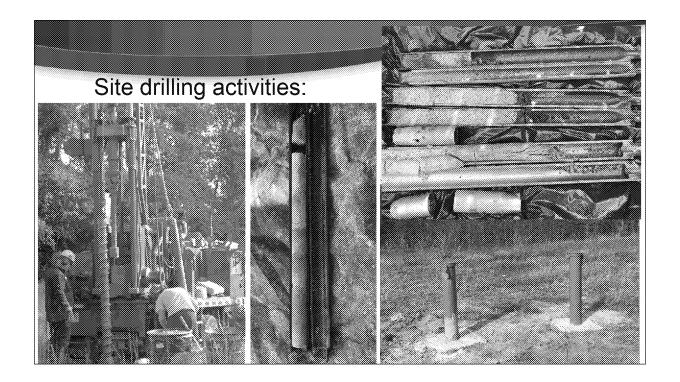
The three public wells are interconnected and pull water from up to 1,300 ft away, and also pull the water table down to the pumping zone in the unconfined wells in the aquifer.

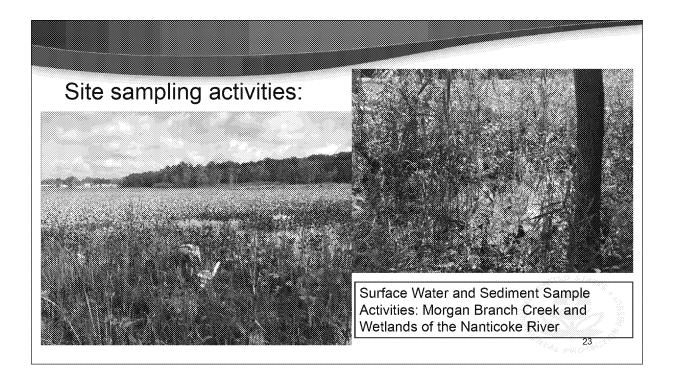
The site boundaries have not been fully defined due to the complex nature of the site geology and limited information.

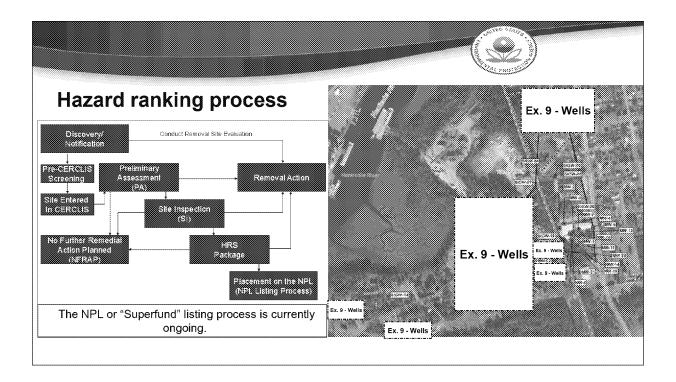
Two groundwater plume areas have been identified as the emanating from the two electroplating facilities. However, it is not yet known how the two plumes are mixed together and how they flow towards the drinking water wells. This information will be identified during the RI/FS as part of the remedial action.



These maps represent streams, and surface water bodies EPA sampled. EPA conducted a limited investigation of the surface water bodies surrounding the site to determine the effects to recreation areas, fisheries, and ecological health of the surface water bodies.







The Hazard Ranking System or (HRS) is a scoring system from 0-100 and is used by EPA to assess the relative threat associated with actual or potential releases of hazardous substances.

Sites that have a score above 28.5 may result in listing to the National Priorities List (NPL).

When a site is listed on the NPL it becomes eligible for further long-term remedial investigation.

There are three main factors when evaluating a site under the HRS process:

Waste Characteristics (how toxic is it) to humans and the environment

Whether there has been a release from a facility

And, Exposure pathways in this case at the Blades Groundwater Site, groundwater migration, surface water migrations, soil exposure that could affect human health or ecosystems.

The HRS scoring system allows EPA to standardize the Site in relation to other impacted Sites to determine if Federal assistance is required.

Due to a sufficient site score. On August, 30, 2019 the State concurred on the listing of the site to the NPL.



## **HRS - Potential Sources in the NPL Listing**

- Based on groundwater and soil sampling, two groundwater sources have been identified as an areawide plume.
- Two electroplating facilities are suspected, but the full extent of the groundwater plume will be explored in the future Remedial Investigation (RI).

As part of DNREC's facility evaluation from 1995-present and EPA's additional sampling in 2016-2019 the agencies identified areas and potential sources of contamination in the shallow aquifer.

The water treatment system will continue to treat for PFAS as long as necessary throughout the future investigation process and as long as needed. The wells will continue to be sampled on a regular basis and the results will be reported in the water quality reports.



## Hazard ranking system factors and process

- EPA used the HRS scoring system to evaluate relative risks at the Blades Groundwater site understand risks to human health and the environment.
- This site scored above the threshold, meaning it is eligible for further investigation and long-term remedial action. and is proposed to be placed on the National Priorities List (NPL or Superfund).

The site was proposed to the NPL on November 8, 2019.

EPA has posted the HRS documents detailing the particulars of the contamination. EPA would welcome public comment through January 7, 2020.

Being on the NPL indicates that sites in the United States are eligible for long-term action and can be financed under the Federal Superfund program.

As part of the process; EPA has the ability to search for PRPs, and also mandates that a public health activity be conducted by the Agency for Toxic Substances and Disease Registry (ATSDR).



#### **Current Situation**

- Throughout the assessment process the drinking water supplied by the Town of Blades continues to meet Federal and State Safe Drinking Water Act standards.
- DNREC has requested EPA's assistance with management and remediation of the site to protect the public from exposure to metals and PFAS, and to protect the environment.
- · NPL listing and future activities:
  - 60-day public comment period through Jan. 7, 2020
  - Final decision on NPL listing after review of public comments

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DNREC has requested EPA's assistance with the management and remediation of the Site in order to protect public drinking water supplies and. If the site is listed on the NPL, EPA will lead the clean-up effort.

Drinking water treatment will continue as long as needed to ensure the public is protected.

DNREC has request EPA assistance with the site.

There are several ways the Site will be addressed including:

The individual companies who are responsible for the contamination will work with the State and EPA to voluntarily clean up the Site.

The companies would be ordered by the State or EPA to clean up the Site using legal means.

The State or EPA can choose to assume the Site and clean it up.

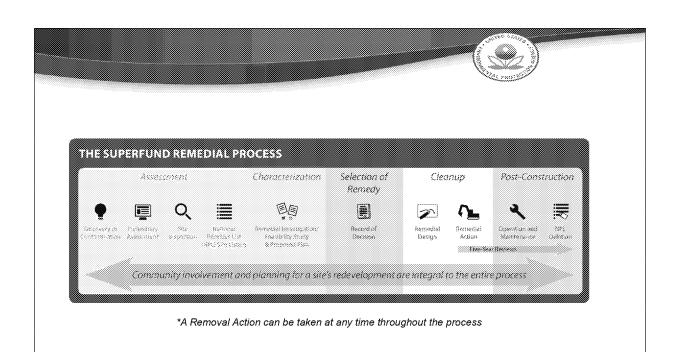
EPA could pay for the cleanup and seek to recover cost at a later date from any identified responsible parties.

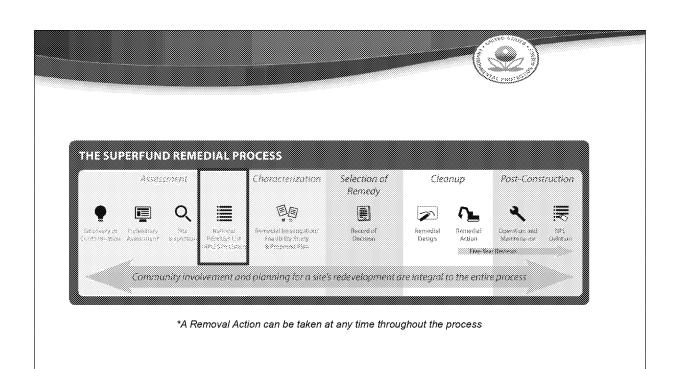
EPA NPL public comment period ends on Jan. 7, 2020. After this date EPA will respond to the HRS site comments. I will now welcome my colleague Dan Taylor whom is the EPA Remedial Project Manager to discuss where we go from here and the next steps...

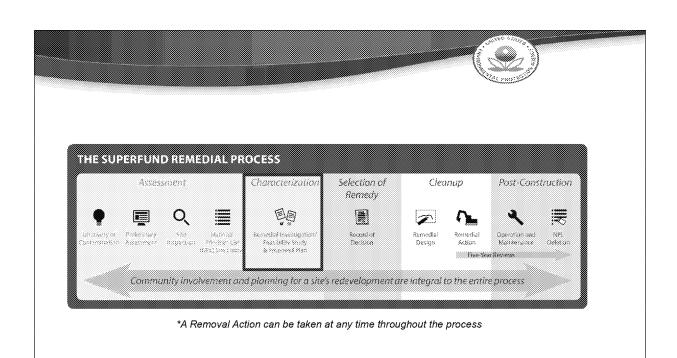


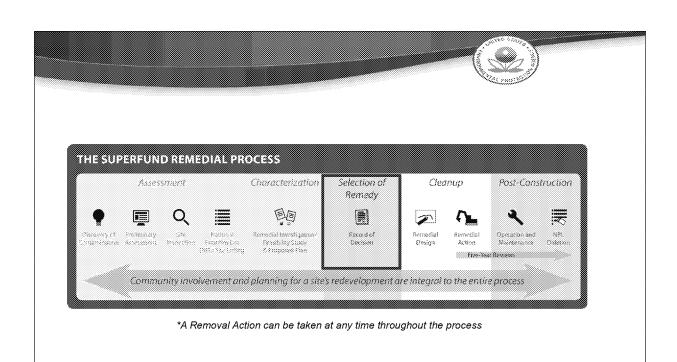
# The Superfund remedial process

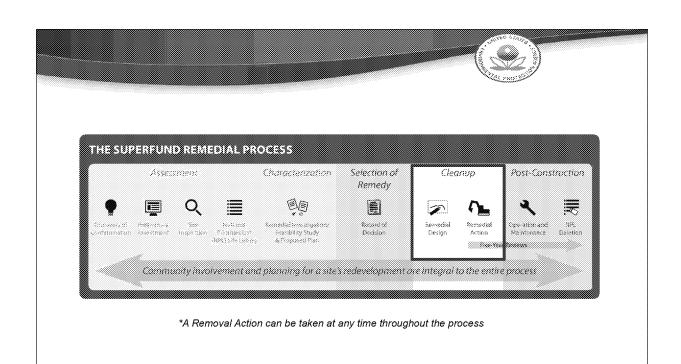
Daniel Taylor & Stepan Nevshehirlian, EPA Remedial Project Managers

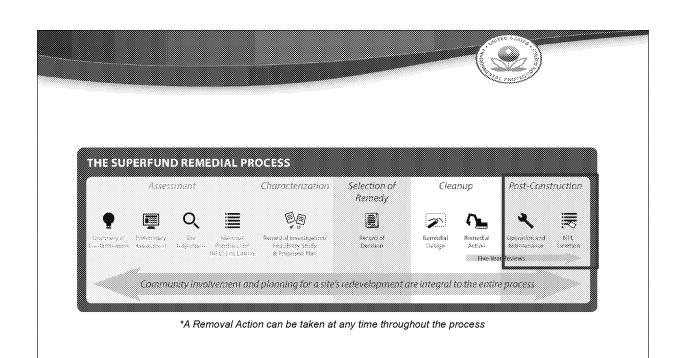








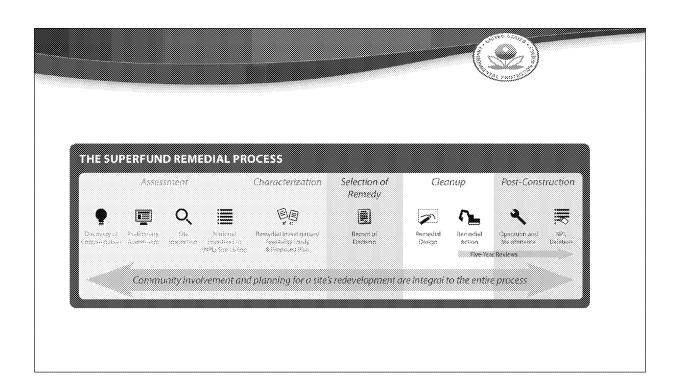






# Next step: Characterization

- · How is this work different?
  - Site assessment vs. Remedial Investigation
- · Remedial investigation
  - Groundwater and other media
  - PFAS and other compounds
  - Detailed risk assessment
- Feasibility study
  - Conducted if risk assessment shows cleanup is needed
  - Evaluates cleanup options
- Health study
  - ATSDR (Agency for Toxic Substances and Disease Registry)



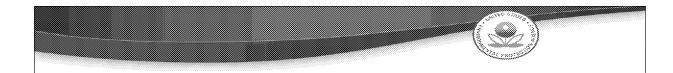


## **Karl Markiewicz**

Agency for Toxic Substances and Disease Registry (ATSDR)

## Jamie Mack

Delaware Division of Public Health



## **Community Resources (EPA)**

- Community Involvement Plan (CIP)
- Technical Assistance Services for Communities (TASC)
- Community Advisory Group (CAG)
- Technical Assistance Grants (TAG)

Order: CIP, TASC, CAG, TAG

Sign up if interested to be interviewed for the CIP

TASC- provides independent assistance through an EPA contract to help communities better understand the science, regulations and policies of environmental issues and EPA actions. Under the TASC contract, a contractor provides scientists, engineers and other professionals to review and explain information to communities.

CAG- A Community Advisory Group (CAG) is made up of representatives of diverse community interests. Its purpose is to provide a public forum for community members to present and discuss their needs and concerns related to the Superfund decision-making process.

TAG- Technical Assistance Grants provides funding to community groups to contract their own technical advisor to interpret and explain technical reports



# **Community Resources**

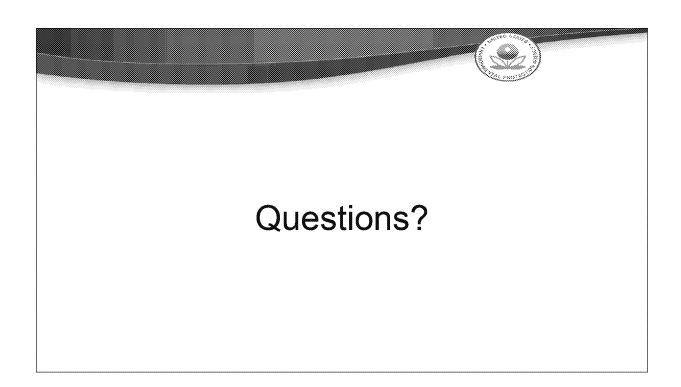
- Site profile page: www.epa/gov/superfund/bladesgroundwater
- Site information repository:
   Seaford District Library
   600 N. Market Street Extended
   Seaford, DE 19973
   (302) 629-2524



## **Community Resources**

- Public comment period is open until January 7, 2020
- Comment online in the Federal Register: www.regulations.gov
  - Search for: "EPA-HQ-OLEM-2019-0484"□
- · Comment by mail:

U.S. Environmental Protection Agency EPA Superfund Docket Center Mailcode 28221T□ 1200 Pennsylvania Avenue NW□ Washington, D.C. 20460





#### **Site Contacts**

#### Connor O'Loughlin

Site Assessment Manager EPA Region 3 215-814-3304

Oloughlin.connor@epa.gov

**Daniel Taylor** Remedial Project Manager EPA Region 3 215-814-3326

Taylor.daniel@epa.gov

#### **Amanda Miles**

Community Involvement Coordinator EPA Region 3 215-814-5557

Miles.amanda@epa.gov

Karl Markiewicz

Toxicologist (ATSDR) EPA Region 3 215-814-3149

kvm4@cdc.gov

**For media inquiries:** Michael Globetti DNREC Public Affairs Office 302-739-9000

Michael Globetti@delaware.gov

#### Rick Galloway

Project Manager, DNREC Remediation Section 302-395-2600

Rick.Galloway@delaware.gov

#### Qazi Salahuddin

Program Administrator, DNREC Remediation Section 302-395-2600

Qazi.Salahuddin@delaware.gov

#### **Christina Wirtz**

Outreach Ombudsman, DNREC Strategic Services Section 302-395-2500

Christina.Wirtz@delaware.gov

